

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) A microfabricated biopsy and genetic analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue, consisting of:

a body comprising a silicon substrate and a glass substrate positioned together, biopsy provided by

a cutter having a tapered opening with a sharp edge for cutting the tissue, said cutter located in said silicon substrate,

a specimen chamber ~~connected directly to said biopsy region and~~ located in said silicon substrate and said glass substrate immediately below said cutter, said specimen chamber positioned to directly receive the tissue cut by said cutter,

a specimen treatment and analysis chamber located in said silicon substrate and said glass substrate abutting and connected directly to said specimen chamber and located adjacent said specimen chamber, ~~and~~

an analysis unit in said specimen treatment and analysis chamber,

a PCR reaction chamber located in said silicon substrate and said glass substrate directly abutting and connected directly to said specimen treatment and analysis chamber, said PCR reaction chamber constructed to receive the tissue from said specimen treatment and analysis chamber, and

a heating unit in said body adjacent said PCR reaction chamber.

Claim 2. (Currently Amended) The instrument of Claim 1, wherein said sharp edge of said cutter has a smooth cutting edge with atomic sharpness capable of cutting very thin specimens of the tissue.

Claim 3. (Previously Presented) The instrument of Claim 2, wherein said cutter is constructed of silicon.

Claim 4. (Currently Amended) The instrument of Claim 2 1, wherein said ~~specimen and analysis chamber and said PCR reaction chamber are constructed of glass~~ analysis unit is an optical analysis unit.

Claim 5. (Currently Amended) The instrument of Claim 1, wherein said specimen treatment and analysis chamber and said PCR reaction chamber are ~~constructed of glass~~ located in said silicon substrate and said glass substrate and said cutter is constructed of silicon and wherein said ~~specimen treatment and analysis chamber and said PCR reaction chamber constructed of glass~~ are glass substrate is bonded to said cutter constructed of silicon substrate.

Claim 6. (Cancelled)

Claim 7. (Cancelled)

Claim 8. (Cancelled)

Claim 9. (Cancelled)

Claim 10. (Cancelled)

Claim 11. (Cancelled)

Claim 12. (Cancelled)

Claim 13. (Cancelled)

Claim 14. (Cancelled)

Claim 15. (Cancelled)

Claim 16. (Currently Amended) A microfabricated biopsy and ~~genetic~~ analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue, consisting of:

a body comprising a silicon substrate and a glass substrate positioned together, biopsy provided by

a cutter having a tapered opening with a sharp edge for cutting the tissue, said cutter located in said body.

a specimen chamber ~~connected directly to said biopsy region and in said~~ silicon substrate and said glass substrate located below said cutter, said specimen chamber positioned to directly receive the tissue cut by said cutter,

a specimen treatment and analysis chamber in said silicon substrate and said glass substrate located adjacent and directly abutting said specimen chamber and connected directly to said specimen chamber, said specimen treatment and analysis chamber having a chemical solution channel, an optical window, and an optical detection system, ~~and~~

a PCR reaction chamber in said silicon substrate and said glass substrate directly abutting and connected directly to said specimen treatment and analysis chamber, said PCR reaction chamber receiving the tissue from said specimen treatment and analysis chamber, and

a heating unit in said body adjacent said PCR reaction chamber.

Claim 17. (Currently Amended) The microfabricated biopsy and ~~genetic~~ analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue of Claim 16, wherein said PCR reaction chamber, said specimen treatment and analysis chamber, and said cutter are ~~part of a single substrate~~ formed in said body.

Claim 18. (Currently Amended) The microfabricated biopsy and ~~genetic~~ analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue of Claim 16, wherein said sharp edge of said cutter has a smooth cutting edge with atomic sharpness capable of cutting very thin specimens of the tissue ~~and wherein said PCR reaction chamber includes a heater.~~

Claim 19. (Currently Amended) The microfabricated biopsy and ~~genetic~~ analysis instrument for biopsy and analysis of tissue with minimal handling of the tissue of Claim 16, wherein said optical detection system is located to provide

optical analysis of the tissue through said optical window of said specimen treatment and analysis chamber.